AMENDMENTS TO THE CLAIMS

1. (Previously presented) A process for producing olefin polymers in the presence of a catalytic system in a continuously operated multistage polymerisation sequence, wherein an olefin monomer is polymerised first in slurry phase in a hydrocarbon diluent or liquid monomer, in at least one loop reactor, the slurry having a first concentration of solids, and then subsequently in gas phase in at least one gas phase reactor, said process comprising

- continuously withdrawing from the loop reactor a polymer slurry containing polymer and a fluid phase, further containing hydrocarbons and optionally hydrogen,
- concentrating the slurry by removing a part of the fluid phase to provide a concentrated slurry,
- conducting the concentrated slurry having a second concentration of solids, which is higher than the first concentration of solids, to a high pressure flash unit in order to remove essentially all of the remaining fluid phase and to provide a product flow containing a suspension of polymer solids and gases, and
- feeding the product flow of the flash unit into the gas phase reactor,

wherein the receiving vessel of the flash unit is operated at a pressure of 10 to 30 bar, the operating pressure of the flash unit being higher than the pressure in the gas phase reactor.

2. (Previously presented) The process according to claim 1, wherein the solids content of the concentrated slurry is 30 to 55 %, preferably 40 to 52 % by volume.

3. (Previously presented) The process according to claim 1 or 2, wherein the slurry is concentrated by using a hydrocyclone or a sieve.

4. (Previously presented) The process to claim 3, wherein the slurry is concentrated in a hydrocyclone to provide an underflow, which comprises the concentrated slurry, and an overflow, which is rich in hydrocarbon(s).

5. (Previously presented) The process according to claim 1, wherein the slurry is withdrawn from the loop reactor in such a manner that the concentration of solids at the outlet is higher than the concentration of solids in the loop reactor.

6. (Previously presented) The process according to claim 5, wherein the overflow is recycled to the loop reactor.

7. (Previously presented) The process according to claim 6, wherein the ratio of the recycled overflow to the underflow withdrawn from the hydrocyclone is 0.01 to 10, preferably 0.01 to 5 and in particular 0.1 to 2.

8. (Previously presented) The process according to any of claims 5 to 7, wherein the solids concentration of the slurry of the overflow is 0.001 to 5 % by volume of the flow.

9. (Currently amended) The process according to ~~any of the preceding claims,~~ claim 1, wherein the flash unit comprises a flash pipe, which is optionally heated, in which the remaining hydrocarbons of the concentrated slurry are at least partly evaporated to form an overflow containing the evaporated fluid phase, and a receiving vessel to form an overflow containing the evaporated fluid phase and a product flow containing the polymer particles and a minor amount of the fluid phase.

10. (Currently amended) The process according to ~~any of the preceding claims,~~ claim1, wherein the receiving vessel of the flash unit is operated at a pressure of 12 to 27 bar, preferably 14 to 24 bar.

11. (Currently amended) The process according to ~~any of the preceding claims,~~ claim 1, wherein the receiving vessel of the flash unit is operated at a pressure, which is at least 0.05 bar higher, than the pressure in the gas phase reactor.

12. (Previously presented) The process according to claim 9, wherein the flash pipe is heated with steam or water so that temperature of the gas at the receiving vessel is 50 to 100 °C, preferably 60 to 90 °C, in particular 70 to 90 °C.

13. (Previously presented) The process according to claim 12, wherein the flash pipe is heated with water taken from a jacket of the loop reactor.

14. (Previously presented) The process according to any of claims 11 to 13, wherein the overflow from the flash is recycled into the loop reactor or conducted to the gas phase reactor or both.